

DRUM BRAKES

NOTE: Prior To Performing Any Service Operations Listed In This Section, Consult The "Technical Service Bulletins" Section For Related Information.

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PRECAUTIONS

When working on or around brake assemblies, care must be taken to prevent breathing asbestos dust, as many manufacturers incorporate asbestos fibers in the production of brake linings. During routine service operations, the amount of asbestos dust from brake lining wear is at a low level because of a chemical breakdown during use and a few precautions will minimize exposure. **Do not sand or grind brake linings unless suitable local exhaust ventilation equipment is used to prevent excessive asbestos exposure.**

1. Wear suitable respirator approved for asbestos dust use during all repair procedures.
2. When cleaning brake dust from brake parts, use vacuum cleaner with highly efficient filter system or denatured alcohol. **Do not use compressed air or dry brush to clean brake parts.**
3. Keep work area clean, using same equipment as for cleaning brake parts.
4. Properly dispose of rags and vacuum cleaner bags by placing them in plastic bags.
5. Do not smoke or eat while working on brake systems.

INSPECTION

GENERAL SYSTEM

1. Inspect components for damage or unusual wear. Replace as required.
2. Inspect backing plate mounting bolts and ensure they are tight.
3. Inspect wheel cylinders. Excessive fluid indicates cup leakage and need for wheel cylinder replacement. Slight amount of fluid is always present and is considered normal, acting as lubricant for cylinder pistons.
4. Check adjuster screw operation. If satisfactory, lightly lubricate adjusting screw and washer with suitable brake lube. If operation is unsatisfactory, replace.

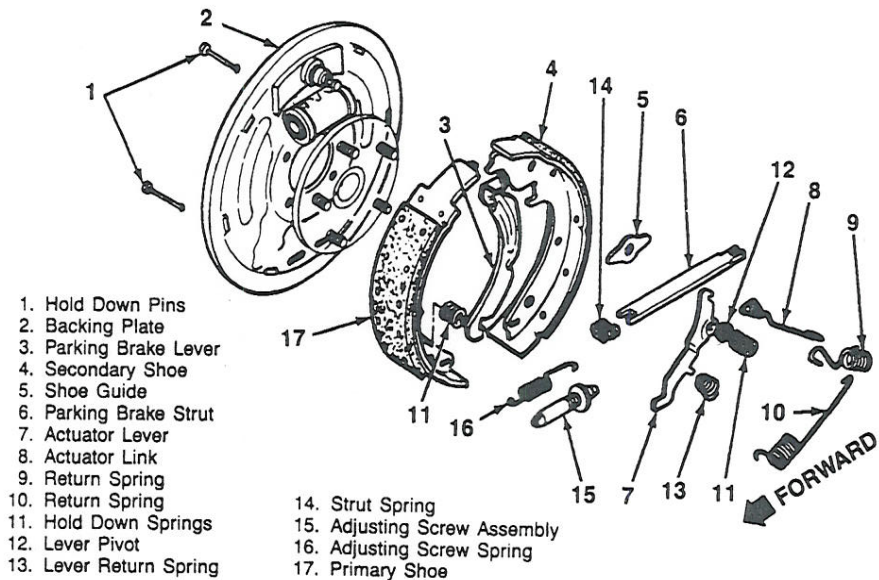


Fig. 1 Duo-servo drum brake assembly. C & K Series

5. Clean rust and dirt from shoe contact surfaces on backing plate using fine emery cloth or other suitable abrasive.

BRAKE DRUMS

Any time the brake drums are removed for brake service, the braking surface diameter should be checked with a suitable brake drum micrometer at several points to determine if they are within the safe, over-size limit stamped on the brake drum outer surface. If the braking surface diameter exceeds specifications, the drum must be replaced. If the braking surface diameter is within specifications, drums should be cleaned and inspected for cracks, scores, deep grooves, taper, out-of-roundness and heat spotting. If drums are cracked or heat spotted, they must be replaced. Grooves and large scores can only be removed by machining with special equipment, as long

as the braking surface is within specifications stamped on brake drum outer surface. Any brake drum sufficiently out of round to cause vehicle vibration or noise while braking, or showing taper should also be machined, removing only enough stock to true up the brake drum.

After a brake drum is machined, wipe the braking surface diameter with a cloth soaked in denatured alcohol. Brake drums should always be machined in pairs and within allowable side to side specifications to maintain equal braking forces.

BRAKE LININGS & SPRINGS

Inspect brake linings for excessive wear, damage, oil, grease or brake fluid contamination. If any of the preceding conditions exist, brake linings should be replaced. Brake shoes should always be replaced as

DRUM BRAKES

an axle set to maintain equal braking pressures. Examine brake shoe webbing and hold-down/return springs for signs of overheating, indicated by a slight blue color. If any component shows signs of overheating, replace it. Overheated springs lose their strength and could cause brake linings to wear out prematurely. Inspect all springs for sags, bends or external damage and replace them as required.

Inspect hold-down retainers and pins for bends, rust and corrosion. If any of the preceding conditions exist, replace retainers and pins.

BACKING PLATE

Inspect backing plate shoe contact surface for grooves that may restrict shoe movement and cannot be removed by lightly sanding with emery cloth or other suitable abrasive. If backing plate exhibits preceding condition, it should be replaced. Also inspect for signs of cracks, warpage and excessive rust, indicating need for replacement.

ADJUSTER MECHANISM

Inspect all components for rust, corrosion, bends and fatigue. Replace as required. On adjuster mechanism equipped with adjuster cable, inspect cable for kinks, fraying or elongation of eyelet and replace as required.

PARKING BRAKE CABLE

Inspect parking brake cable end for kinks, fraying or elongation and replace as required. Compress clamp where it enters backing plate to remove using suitable small hose clamp.

BRAKE SERVICE

C & K SERIES

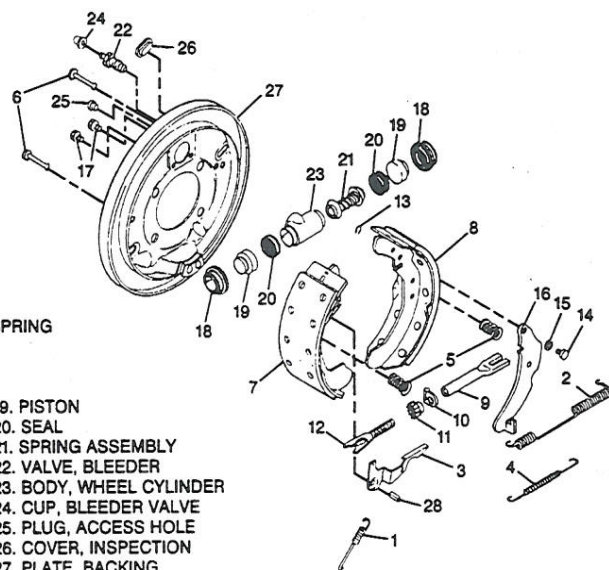
DUO-SERVO

Removal

1. Raise and support vehicle.
2. Mark relationship of wheel to hub, then remove tire and wheel assembly.
3. **On models equipped with full-floating axles**, remove hub and drum assembly as described in "Drive Axles" chapter.
4. **On models equipped with semi-floating axles**, proceed as follows:
 - a. Install pin into park brake lever.
 - b. Mark relationship of drum to axle.
 - c. Remove rear brake drum retainers, as required.
 - d. Remove rear brake drum.
5. **On all models**, remove return springs and shoe guide, Fig. 1.
6. Remove brake hold down springs and pins.
7. Disconnect actuator lever and pivot.
8. Remove lever return spring and actuator link.
9. Disconnect park brake strut and spring.
10. Remove park brake lever.
11. Remove adjusting screw assembly.
12. Remove screw spring.

1. SPRING, ACTUATOR
2. SPRING, UPPER RETURN
3. ACTUATOR, ADJUSTER
4. SPRING, LOWER RETURN
5. ASSEMBLY, HOLD-DOWN SPRING
6. PIN, HOLD-DOWN
7. SHOE & LINING
8. SHOE & LINING
9. SOCKET, ADJUSTER
10. CLIP, SPRING
11. NUT, ADJUSTER
12. SCREW, ADJUSTER
13. RING, RETAINING
14. PIN
15. WASHER, SPRING
16. LEVER, PARK BRAKE
17. BOLT
18. BOOT

19. PISTON
20. SEAL
21. SPRING ASSEMBLY
22. VALVE, BLEEDER
23. BODY, WHEEL CYLINDER
24. CUP, BLEEDER VALVE
25. PLUG, ACCESS HOLE
26. COVER, INSPECTION
27. PLATE, BACKING
28. PIN, ADJUSTER



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Fig. 2 Single-servo drum brake. C & K Series

Installation

Do not interchange left and righthand adjusting screws.

1. Lubricate shoe pads and adjusting screw threads with thin coat of suitable white lithium grease.
2. Install adjusting screw assembly and adjusting screw spring to both shoes. Coils of adjusting screw spring must not touch adjusting screw.
3. Connect shoe assembly to backing plate.
4. Install parking brake lever.
5. Install strut spring onto park brake strut.
6. Install park brake strut.
7. Connect actuator lever and pivot.
8. Install actuator link.
9. Install lever return spring, hold down pins and springs.
10. Install shoe guide and return springs.
11. **On models equipped with semi-floating axles**, proceed as follows:
 - a. Align relationship mark and install brake drum to axle.
 - b. Install retainers, as required.
 - c. Remove park brake lever pin.
12. **On models equipped with full-floating axles**, install hub and drum assembly as described in "Drive Axles" chapter.
13. **On all models**, install tire and wheel assembly.
14. Adjust rear brakes as described under "Adjustments."
15. Lower vehicle.

SINGLE-SERVO

Removal

1. Raise and support rear of vehicle.
2. Mark relationship of drum to axle.
3. Remove axle shaft as described in "Drive Axles" chapter.
4. Remove retaining ring, key and adjusting nut using wheel bearing nut wrench tool No. J-2222-C, or equivalent.

5. Remove washer, hub and drum. If drum is difficult to remove, proceed as follows:

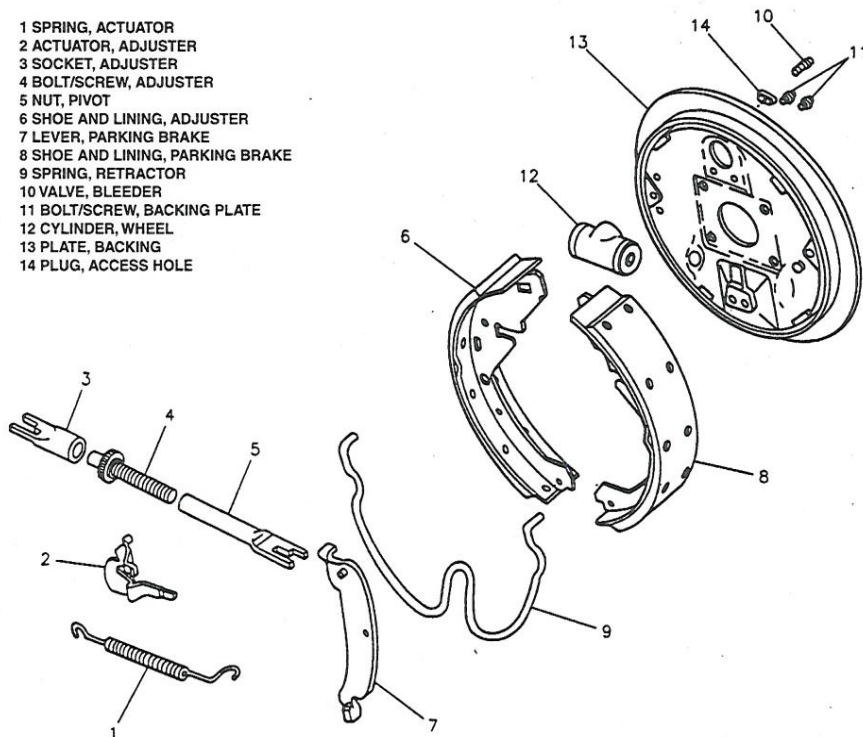
- a. Ensure parking brake is released.
 - b. Back off park brake cable adjustment.
 - c. Remove backing plate access hole plug and insert suitable screwdriver through hole to push parking brake lever off stop.
 - d. Tap gently on outer rim of drum and/or around inner drum diameter, using suitable rubber mallet.
 - e. **Do not deform drum by excessive beating.**
6. Remove actuator spring and adjuster actuator.
 7. Raise actuator lever arm up until upper end clears slot in adjuster screw.
 8. Slide actuator off pin and disconnect spring from shoe, Fig. 2.
 9. Remove hold-down springs and pins.
 10. Remove lower return spring by pulling bottom ends of shoes apart, lifting lower return spring over anchor plate, allowing shoe ends to come together and releasing spring.
 11. Remove shoe and lining.
 12. Remove upper return spring.
 13. Bring shoes' bottom ends together and overlap, as required, so upper shoe ends clear wheel cylinder boots.
 14. Spread bottom of assembly to clear axle flange and remove adjusting screw assembly. **Do not damage wheel cylinder boots.**
 15. Remove upper return spring, adjusting screw assembly from shoes, retaining ring and pin.
 16. Remove spring washer and park brake lever.

Installation

1. Install parking brake lever and spring washer. Concave side of spring washer should face parking brake lever. Install pin.

2. Install retaining ring and adjuster pin in shoe so pin projects .268-.276 inch from shoe web side where adjuster actuator is installed.
3. Apply brake lubricant No. 5450032, or equivalent, to adjuster screw threads, and inside socket diameter and face. Adequate lubrication is achieved when there is continuous bead of lubricant at open end of adjuster nut and socket when threads are fully engaged.
4. Install upper return spring by laying shoes on clean, flat work surface in position they will be in when installed on backing plate. Shoe with parking brake lever goes to rear of vehicle.
5. Install adjusting screw assembly. Adjusting screw assembly should engage adjuster shoe and parking brake lever. Spring clip must face backing plate. **Do not over-stretch upper return spring.**
6. Lubricate backing plate shoe pads thin coat of suitable white lithium grease.
7. Install shoe and lining assemblies.
8. Install upper return spring.
9. Install adjusting screw assembly, noting the following:
 - a. Do not damage wheel cylinder boots.
 - b. Overlap bottoms of shoes so upper shoe ends clear wheel cylinder boots.
 - c. Ensure upper shoe ends rest on wheel cylinder piston ends.
 - d. Do not place lower shoe web ends under anchor plate until lower return spring is installed.
10. Bring ends of shoe and lining assemblies together over anchor plate. **Do not over-stretch lower return spring.**
11. Hook lower spring ends to shoe web holes.
12. Spread lower ends of shoe and lining assemblies to clear anchor plate.
13. Position shoes against backing plate and release them.
14. Pull spring into groove at bottom of anchor plate.
15. Connect hold-down pins and spring assemblies.
16. Install adjuster actuator over end of adjuster pin so top leg engages notch in adjuster screw.
17. Install actuator spring. Free end of adjuster actuator must engage notch of adjuster nut. **Do not over-stretch actuator spring.**
18. Connect park brake cable to parking brake lever.
19. Install hub and drum on axle tube. Ensure bearings and oil seal are positioned properly.
20. Apply light coat of suitable high melting point EP bearing lubricant to contact surfaces and outside of axle tube.
21. Install washer and place tang into keyway.
22. Install adjusting nut and adjust bearing preload.
23. Install key, retaining ring and axle shaft.
24. Adjust rear brakes as outlined under "Adjustments."
25. Install tire and the wheel assembly.

- 1 SPRING, ACTUATOR
- 2 ACTUATOR, ADJUSTER
- 3 SOCKET, ADJUSTER
- 4 BOLT/SCREW, ADJUSTER
- 5 NUT, PIVOT
- 6 SHOE AND LINING, ADJUSTER
- 7 LEVER, PARKING BRAKE
- 8 SHOE AND LINING, PARKING BRAKE
- 9 SPRING, RETRACTOR
- 10 VALVE, BLEEDER
- 11 BOLT/SCREW, BACKING PLATE
- 12 CYLINDER, WHEEL
- 13 PLATE, BACKING
- 14 PLUG, ACCESS HOLE



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Fig. 3 Drum brake assembly. Montana, Silhouette, Trans Sport & Venture

Align marks made during removal.

ASTRO, BRAVADA, S & T SERIES & SAFARI

Refer to "Duo-Servo" under "C & K Series."

G SERIES

REMOVAL

1. Raise and support vehicle, then remove tire and wheel assembly.
2. Install park brake lever pin.
3. Mark relationship of rear brake drum to axle.
4. Remove rear brake drum retainers, as required.
5. Remove rear brake drum.
6. Remove rear brake shoe return springs.
7. Remove hold-down springs and pins.
8. Remove shoe guide, rear brake shoe actuator and spring.
9. Remove rear brake shoe actuator link.
10. Remove rear parking brake lever strut and spring.
11. Remove rear brake shoe adjuster spring and adjuster.
12. Remove rear brake shoes.

INSTALLATION

1. Lubricate rear brake backing plate and adjusting screw threads with thin coat of suitable white lithium grease.
2. Install rear brake shoes.
3. Install rear brake shoe adjuster.
4. Install rear brake shoe adjuster spring. **Do not interchange left and right-hand brake shoe adjusting screws.** Coils of adjusting screw spring must not touch adjusting screw.

5. Install rear park brake lever strut and spring.
6. Install rear brake shoe actuator link.
7. Install rear brake shoe actuator and spring.
8. Install shoe guide, hold-down pins and springs.
9. Install rear brake shoe return springs.
10. Locate relationship mark and install brake drum to axle.
11. Install rear brake drum retainers, as required.
12. Remove park brake lever pin.
13. Install tire and the wheel assembly.
14. Adjust rear brakes as outlined under "Adjustments."
15. Adjust parking brake as outlined under "Adjustments."
16. Lower vehicle.

P SERIES

Refer to "Duo-Servo" under "C & K Series."

MONTANA, SILHOUETTE, TRANS SPORT & VENTURE

REMOVAL

1. Release parking brake.
2. Raise and support vehicle, then remove wheel and tire assembly.
3. Mark relationship of drum to hub.
4. Remove and discard retaining clip, as required.
5. Remove brake drum. If brake drum does not come off easily, proceed as follows:
 - a. Loosen parking brake cable.
 - b. Remove backing plate access hole plug.

DRUM BRAKES

- c. Disengage self adjuster by inserting suitable flat-bladed tool through backing plate access hole.
- d. Loosen adjuster screw by inserting another flat-bladed tool through access hole.
- e. Install access hole plug.
- f. Apply small amount of penetrating oil around brake drum center hole.
- g. Remove brake drum.
6. Remove loop end of adjuster spring from actuator and straight end of spring from secondary brake shoe using brake shoe spanner and spring remover tool No. J-38400, or equivalent, **Fig. 3, Do not over stretch adjuster spring.**
7. Remove return spring from primary brake shoe using brake shoe spanner and spring remover tool.
8. Pry return spring end toward axle using flat edge of brake shoe spanner and spring remover tool until it snaps off brake shoe.
9. Remove primary brake shoe.
10. Remove adjuster actuator from primary brake shoe.
11. Remove adjuster from secondary brake shoe and park brake actuator.
12. Remove park brake actuator from secondary brake shoe.
13. Remove return spring from secondary brake shoe using brake shoe spanner and spring remover tool.
14. Pry return spring end toward axle using flat edge of brake shoe spanner and spring remover tool.
15. Remove secondary brake shoe.
16. Remove return spring from backing plate.

INSTALLATION

1. Apply brake lubricant No. 1052196, or equivalent, to six brake shoe contact points on backing plate, adjuster screw threads and adjuster socket inside diameter.
2. Install return spring to backing plate.
3. Install secondary brake shoe to backing plate.
4. Install return spring into secondary brake shoe using brake shoe spanner and spring remover tool No. J-38400, or equivalent.
5. Install park brake actuator to secondary brake shoe.
6. Install adjuster screw to secondary brake shoe and park brake actuator. **Ensure adjuster engages brake shoe and park brake actuator properly.**
7. Apply suitable brake lubricant to adjuster actuator/primary brake shoe interface.
8. Install adjuster actuator to primary brake shoe.
9. Install primary brake shoe with adjuster actuator to backing plate.
10. Install return spring into primary brake shoe using brake shoe spanner and spring remover tool. **Ensure adjuster engages brake shoe and adjuster actuator properly.**
11. Install straight end of adjuster spring

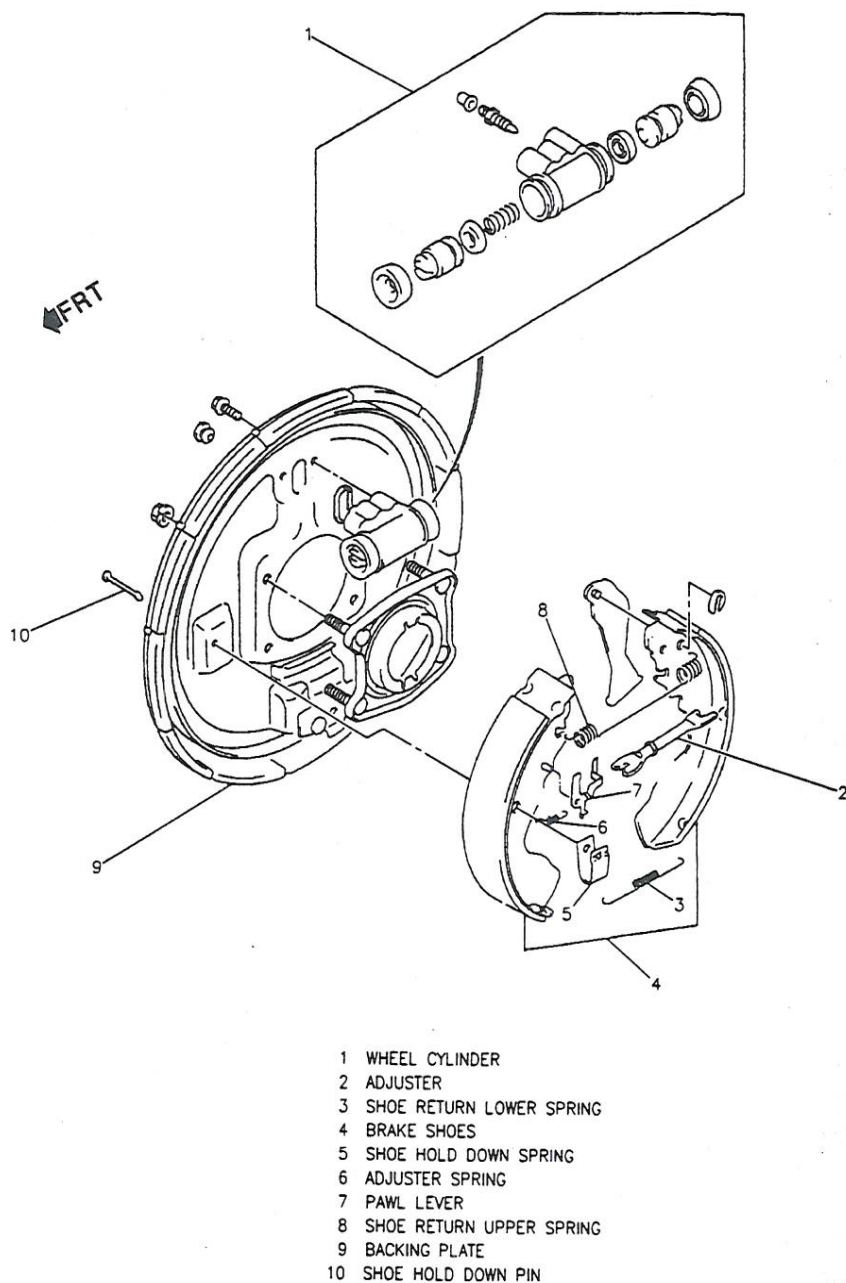


Fig. 4 Exploded view of drum brake assembly. Tracker

into secondary brake shoe and loop end to actuator using brake shoe spanner and spring remover tool. **Do not over stretch adjuster spring.**

12. Move park brake actuator to spread brake shoes apart. Adjuster actuator tab should move up, forcing adjuster wheel to rotate. If adjuster does not operate properly, remove adjuster, then install, again. **Ensure adjuster operates properly.**
13. Adjust brake shoes as outlined under "Adjustments."
14. Adjust park brake cable as outlined under "Adjustments."
15. Align brake drum and the hub marks, then install brake drum.

16. Install tire and wheel assembly, then lower vehicle.

AZTEK

REMOVAL

1. Raise and support vehicle.
2. Mark relationship of drum to hub.
3. Remove and discard retaining clip.
4. Remove brake drum. If brake drum does not come off easily, proceed as follows:
 - a. Loosen parking brake cable.
 - b. Remove backing plate access hole plug.
 - c. Disengage self adjuster by inserting suitable flat-bladed tool through backing plate access hole.

- d. Loosen adjuster screw by inserting another flat-bladed tool through access hole.
- e. Install access hole plug.
- f. Apply small amount of penetrating oil around brake drum center hole.
- g. Remove brake drum.
5. Disengage adjuster spring hook end from tab on adjuster actuator. **Do not over stretch adjuster spring.**
6. Remove straight end of adjuster spring from brake shoe.
7. Remove adjuster actuator from brake shoe.
8. Remove return spring from brake shoes.
9. Remove park brake cable from park brake actuator lever.
10. Remove brake shoe hold-down springs and retainers from brake shoes.
11. Remove adjuster from brake shoes and park brake actuator lever.
12. Remove horseshoe clip retaining park brake actuator lever to brake shoe.
13. Remove park brake actuator lever and wave washer from brake shoe.

INSTALLATION

1. Apply brake lubricant No. 1052196, or equivalent, to brake shoe contact points on backing plate, adjuster screw threads and adjuster socket inside diameter.
2. Install park brake actuator lever and wave washer to brake shoe.
3. Install horseshoe clip to park brake actuator lever pivot pin.
4. Install brake shoes to brake backing plate.
5. Install brake shoe hold-down pins, springs and retainers to brake shoes.
6. Install park brake cable to park brake actuator lever.
7. Install adjuster screw to brake shoe and park brake actuator. **Ensure adjuster engages brake shoe and park brake actuator properly.**
8. Apply brake lubricant No. 1052196, or equivalent, to adjuster actuator/brake shoe interface.
9. Install adjuster actuator to brake shoe.
10. Install straight end of adjuster spring to brake shoe. **Do not over stretch adjuster spring.**
11. Install adjuster spring hook end to tab on adjuster actuator.
12. Install return spring to brake shoes.
13. Move park brake actuator lever to spread brake shoes apart. Adjuster actuator lever should move downward, then upward as park brake actuator lever is released, forcing adjuster wheel to rotate. If adjuster does not operate properly, remove and install adjuster. **Ensure adjuster operates properly.**
14. Adjust brake shoes as and park brake cable as outlined under "Adjustments."
15. Align marks on brake drum and hub made during removal.
16. Install brake drum.
17. Install tire and wheel assembly.

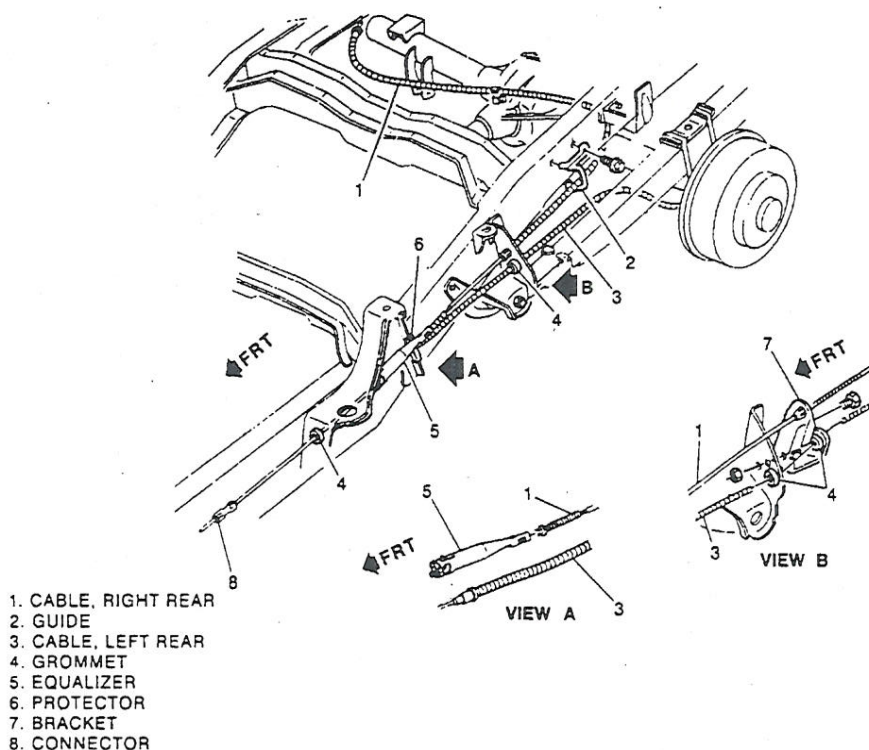


Fig. 5 Parking brake cable. C & K Series

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TRACKER

REMOVAL

1. Remove four mounting screws and two clips, then lift up console.
2. Loosen parking brake cable lock nut.
3. Raise and support vehicle, then remove tire and wheel assembly.
4. Remove locking washers from wheel studs.
5. Remove drum from axle hub. If drum cannot be removed by hand, force drum off hub by installing two 8 mm bolts into drum and tightening.
6. To increase brake shoe to drum clearance, pull shoe hold-down pin approximately .197 inch.
7. Release shoe hold down springs by turning pins.
8. Remove shoe hold-down springs, Fig. 4.
9. Remove upper return spring, strut, adjuster, adjuster lever, adjuster spring, strut spring and pawl lever.
10. Remove lower return spring.
11. Disconnect parking brake cable from shoe lever.
12. Remove brake shoes with park brake shoe lever attached.
13. Disconnect park brake cable from shoe lever.
14. Remove brake shoes.
15. Remove park brake shoe lever and retainer from brake shoe.

INSTALLATION

Apply suitable white lithium grease to all of the brake component metal contact

points where the brake shoe metal contacts the backing plate, the wheel cylinder, the adjustment strut, etc. prior to installation.

1. Install parking brake lever to shoe with C-clip.
2. Install strut and springs.
3. Install brake shoes with park brake shoe lever.
4. Connect parking brake cable to shoe lever and install brake shoes.
5. Install upper return spring, strut, adjuster, adjuster lever, adjuster spring, strut spring and pawl lever.
6. Install shoe hold-down springs. Secure shoe hold down springs by turning pins.
7. Measure brake shoes outer diameter. If outer diameter is not 8.638–8.650 inches, turn adjuster.
8. Install brake drum and locking washers to wheel studs.
9. Install tire and wheel assembly.
10. Lower vehicle.
11. Press brake pedal 3–10 times with approximately 66 lbs. pressure to obtain proper drum-to-shoe clearance.
12. Adjust parking brake as described under "Adjustments."
13. Install console.

ADJUSTMENTS

Service Brake

The following procedure has been revised by a technical service bulletin.

These brakes have self-adjusting shoe mechanisms that ensure correct lining-to-drum clearances at all times. The automatic

DRUM BRAKES

adjusters operate only when the brakes are applied as the vehicle is moving rearward or when the car comes to an uphill stop.

Although the brakes are self-adjusting, an initial adjustment is necessary after the brake shoes have been relined or replaced, or when the length of the adjusting screw has been changed during some other service operation.

Frequent usage of an automatic transmission forward range to halt reverse vehicle motion may prevent the automatic adjusters from functioning, thereby inducing low pedal heights. Should low pedal heights be encountered, it is recommended that numerous forward and reverse stops be made until satisfactory pedal height is obtained.

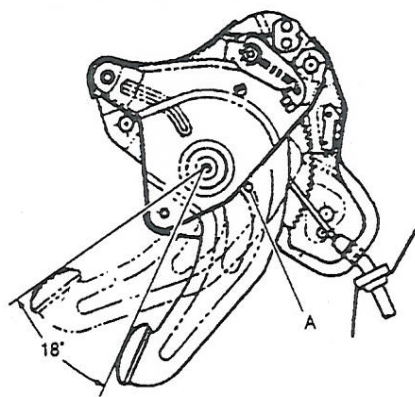
If a low pedal condition cannot be corrected by making numerous reverse stops (provided the hydraulic system is free of air) it indicates that the self-adjusting mechanism is not functioning. Therefore it will be necessary to remove the brake drum, clean, free up and lubricate the adjusting mechanism. Then adjust the brakes, ensuring the parking brake is fully released.

1. Knock out lanced area in backing plate or drum using suitable punch. If drum is installed on vehicle when this is done, remove drum and clean brake compartment of all metal. **When adjustment is completed, new hole cover must be installed in backing plate.**
2. Turn brake adjusting screw to expand brake shoes at each wheel until wheel can just be turned by hand using suitable tool. Drag should be equal on all wheels.
3. Back off adjusting screw at each wheel three notches.
4. If shoe still drags slightly on drum, back off adjusting screw an additional 1-2 notches.
5. When adjusting screw has been backed off correctly, brakes should be free of drag. Heavy drag at this point indicates tight parking brake cable.
6. Install adjusting hole cover in brake backing plate.
7. Check parking brake for proper adjustment.

Manual Parking Brake

ASTRO, BRAVADA, S & T SERIES & SAFARI

1. Block front wheels, then raise and support vehicle.
2. Loosen equalizer and adjust equalizer until brake pedal effort gauge shows 100 lbs. at 10 clicks.
3. Release parking brake and rotate rear wheels. There should be no brake drag in either direction.
4. Lower vehicle and unblock front wheels.



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Fig. 6 Parking brake adjustment setting. C & K Series

C & K SERIES

The parking brake must be adjusted any time the parking brake cables are serviced, or the holding ability is not adequate. Before adjusting the parking brake, check the condition of the service brakes and adjust properly as outlined under "Service Brake." The C3500HD has a propeller shaft mounted parking brake and does not affect the service brakes.

1. Block front wheels, then raise and support vehicle.
2. Loosen adjusting nut at equalizer, Fig. 5.
3. Set parking brake by pushing pedal down 18°.
4. Insert .125 inch pin into locating hole (A), Fig. 6.
5. Push pedal downward until pin contacts parking brake outer flange.
6. Turn adjusting nut until wheels rotate forward with moderate drag.
7. Release parking brake and rotate rear wheels. There should be no drag.
8. Lower vehicle and unblock front wheels.

G & P SERIES

PEDAL TYPE

1. Raise and support rear of vehicle.
2. Loosen equalizer adjusting nut and apply parking brake four clicks from fully released position.
3. Tighten equalizer nut until moderate drag is felt when rear wheels are rotated forward.
4. Release parking brake and rotate rear wheels. No drag should be present.
5. Lower vehicle.

LEVER TYPE

1. Turn parking brake lever adjusting knob fully counterclockwise.
2. Apply parking brake, then raise and support rear of vehicle.
3. Loosen nut at intermediate cable equalizer and adjust nut to give light drag at rear wheels.

4. Fine tune adjustment with adjusting knob on parking brake lever.
5. Release parking brake lever and rotate rear wheels. No drag should be present.
6. Lower vehicle.

PROPELLER SHAFT TYPE

Standard Method

1. Raise and support vehicle, then remove wheel and tire assembly.
2. Install drum over first rivet section, leaving adjuster screw accessible.
3. Place .010 inch shims between both shoes and drum. Shims should be 140-180° apart.
4. Rotate adjuster screw until shims indicate no clearance.
5. Remove shims and complete drum installation. Drum should spin free with only light drag.

Optional Method

1. Raise and support vehicle.
2. Adjust screw through drum opening until brake just locks up and back off adjuster 2-4 notches. Drum should spin freely with only light drag.
3. Lower vehicle.

AZTEK, MONTANA, SILHOUETTE, TRANS SPORT & VENTURE

1. Raise and support vehicle.
2. Release all tension in parking brake cable.
3. Ensure both levers are against stops.
4. Adjust rear service brakes as outlined under "Service Brake."
5. Adjust parking brake by turning nut on equalizer while spinning both rear wheels. When rear wheel develops drag, stop adjusting and back off one full turn.
6. Apply parking brake to four clicks and check rear wheel rotation.
7. Ensure wheel does not move when attempting to rotate it by hand in forward direction.
8. Ensure wheel drags or does not move when attempting to rotate in rearward direction.
9. Release parking brake and check for free wheel rotation.
10. Apply parking brake to 10 clicks and release. Repeat five times.
11. Check parking brake for full release.
12. Turn ignition On and ensure Brake indicator lamp is Off.
13. If light is On and brake appears to be released, ensure pedal is in release mode and fully returned to stop and pull down on parking brake cable to take up slack.
14. Lower vehicle.

TRACKER

1. Ensure there is no air trapped in brake system and brake pedal travel is within

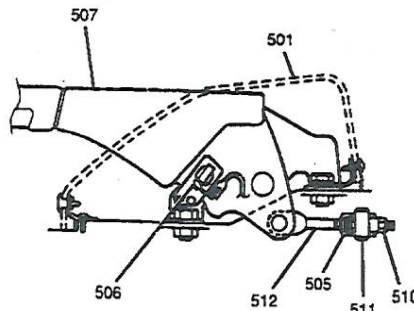
specifications.

2. Ensure brake pedal has been pressed a few times with approximately 66 lbs. load and parking brake lever has been pulled up a few times with approximately 44 lbs. of force and completely released.
3. Ensure rear brake shoes are not worn beyond limit and self-adjusting mechanism operates properly.
4. Adjust parking brake by adjusting self locking nut located on parking brake adjusting rod on parking brake lever until parking brake engages within 7-9 notches when being pulled with approximately 40 lbs. of force, Fig. 7.

Automatic Apply Parking Brakes

CONTROL ROD

1. Place parking brake control valve lever in its park detent position.
2. Place selector in park position.
3. Install rod end into control valve lever and mounting nut. **Torque** nut to 124 ft. lbs.
4. Turn rod clockwise until it is in line with transmission control equalizer lever hole.



- 501 PARKING BRAKE LEVER COVER
- 505 EQUALIZER
- 506 PARKING BRAKE SWITCH
- 507 PARKING BRAKE LEVER
- 510 PARKING BRAKE CABLE LOCKNUT
- 511 SPACER
- 512 CONNECTING ROD

GC4089600043000X

Fig. 7 Parking brake lever assembly. Tracker

5. Install mounting nut. **Torque** nut to 124 ft. lbs. and jam nuts to 13 ft. lbs.

TECHNICAL SERVICE BULLETINS

BRAKE LEAD/PULL & FRONT BRAKE WEAR

1992-1999 C & K Series & 1996-2000 G Series

On some of these models there may be leading or pulling to either side while applying the brakes and premature front brake wear, especially vehicles that have been used to tow a heavy load.

This condition may be caused by wearing of the front brake material.

To correct this condition proceed as follows:

1. Replace rear brake shoes with new brake material shoes (Part No. 18029651). This fix does not apply to 13 x 2 1/2 brake, Durastop (18029650), or any other size.
2. On Suburban models, best performance can be achieved with replacing brake combination valve (1992-94 part No. 15650150 and 1995-2000 part No. 12548265).
3. On G2/G3 Series Vans, also replace front brakes pads (Part No. 12471685).

DRUM BRAKE SPECIFICATIONS

Model	Year	Brake Lining Wear Limit, Inch ^②	Brake Drum Inside Diameter, Inches			Drum Runout Limit, Inch	Drum Maximum Out Of Roundness, Inch ^②
			Nominal	Maximum Refinish	Maximum Inside Diameter (Discard Limit) ^①		
CADILLAC							
Escalade	1999–2000	.030	10.000	10.050	10.090	.006	—
CHEVROLET							
Astro Van	1997–2001	.030	9.500	9.560	9.590	.006	—
Blazer S/T	1997–2001	.030	9.500	9.560	9.590	.006	—
C/K Pickup & Cab-Chassis, G & P Series 10" Drum ^③	1997–2000	.030	10.000	10.050	10.090	.006	—
C/K Pickup & Cab-Chassis, G & P Series 11" Drum ^③	1997–2000	.030	11.000	10.060	11.090	.006	—
C/K Pickup & Cab-Chassis, G & P Series 11.15" Drum ^③	1997–2000	.030	11.150	11.210	11.240	.006	—
C/K Pickup & Cab-Chassis, G & P Series 13" Drum ^③	1997–2000	.030	13.00	13.060	13.090	.006	—
Express/Van 1500	1997–2001	.030	11.150	11.210	11.240	.006	—
Express/Van 2500 (7300 Lbs. GVW)	1997–2001	.030	11.150	11.210	11.240	.006	—
Express/Van 2500 (8600 Lbs. GVW)	1997–2001	.030	13.000	13.060	13.090	.006	—
Express/Van 3500	1997–2001	.030	13.00	13.060	13.090	.006	—
S Series Pickup	1997–2001	.030	9.50	9.56	9.59	.006	—
Suburban 10	1997–99	.030	11.150	11.210	11.240	.006	—
Suburban 20	1997–99	.030	13.00	13.060	13.090	.006	—
Tahoe	1997–99	.030	10.000	10.050	10.090	.006	—

Continued

DRUM BRAKES

DRUM BRAKE SPECIFICATIONS—Continued

Model	Year	Brake Lining Wear Limit, Inch ^②	Brake Drum Inside Diameter, Inches			Drum Runout Limit, Inch	Drum Maximum Out Of Roundness, Inch ^②
			Nominal	Maximum Refinish	Maximum Inside Diameter (Discard Limit) ^①		
CHEVROLET							
Tracker Two-Door	1998	.040	—	8.66	8.74	.0016	—
Tracker Four-Door	1998	.040	—	10.000	10.070	.0016	.0004
Tracker	1999–2001	.040	—	8.66	8.74	.0016	.0004
Venture	1997–2001	.059	8.863	8.877	8.909	.006	—
GEO							
Tracker Two-Door	1997	.040	—	8.66	8.74	.0016	.0004
Tracker Four-Door	1997	.040	—	10.000	10.070	.0016	.0004
GMC							
C/K Pickup & Cab-Chassis, G & P Series 10" Drum ^③	1997–2000	.030	10.000	10.050	10.090	.006	—
C/K Pickup & Cab-Chassis, G & P Series 11" Drum ^③	1997–2000	.030	11.000	10.060	11.090	.006	—
C/K Pickup & Cab-Chassis, G & P Series 11.15" Drum ^③	1997–2000	.030	11.150	11.210	11.240	.006	—
C/K Pickup & Cab-Chassis, G & P Series 13" Drum ^③	1997–2000	.030	13.00	13.060	13.090	.006	—
Denali	1999–2000	.030	10.000	10.050	10.090	—	—
Jimmy & Envoy	1997–2001	.030	9.50	9.56	9.59	.006	—
Safari Van	1997–2001	.030	9.50	9.56	9.59	.006	—
Savana 1500	1997–2001	.030	11.150	11.210	11.240	.006	—
Savana 2500 (7300 Lbs. GVW)	1997–2001	.030	11.150	11.210	11.240	.006	—
Savana 2500 (8600 Lbs. GVW)	1997–2001	.030	13.00	13.060	13.090	.006	—
Savana 3500	1997–2001	.030	13.00	13.060	13.090	.006	—
Sonoma	1997–2001	.030	9.50	9.56	9.59	.006	—
Suburban 1500	1997–99	.030	11.150	11.210	11.240	.006	—
Suburban 2500	1997–99	.030	13.00	13.060	13.090	.006	—
Yukon	1997–99	.030	10.000	10.050	10.090	.006	—
OLDSMOBILE							
Silhouette	1997–2001	.059	8.863	8.877	8.909	.006	—
PONTIAC							
Aztek	2001	.030	—	9.882	9.902	.006	—
Montana & Trans Sport	1997–2001	.059	8.863	8.877	8.909	.006	—

GVW — Gross Vehicle Weight

① — Maximum brake drum inside diameter (discard limit) is stamped on drum.

② — Above rivet head or shoe. Original equipment type brake linings.

③ — Except 1999–2000 Silverado & Sierra.

TIGHTENING SPECIFICATIONS

Year	Component	Torque, Ft. Lbs.
ASTRO & SAFARI		
1997– 2001	Backing Plate	35
	Bleeder Valve	62①
	Booster To Gear Line	25
	Brake Booster	20
	Brake Hose To Rear Axle Bracket	13
	Combination Valve Bracket	21
	Master Cylinder	21
	Parking Brake	18
	Power Steering Pump To Booster Line	25
	Return Line At Booster & Gear	25
	Wheel Cylinder	13
	Wheel Lug Nuts	100
BRAVADA, S & T SERIES		
1997– 2001	Backing Plate	35
	Bleeder Valve	62①
	Brake Booster	16
	Brake Line Fitting (Steel)	16
	Front Brake Hose	32
	Master Cylinder	20
	Parking Brake	22
	Rear Brake Hose To Bracket	13
	Wheel Cylinder	13
	Wheel Lug Nuts	95
C & K SERIES		
1997– 2000	Backing Plate (Duo-Servo)	118①
	Backing Plate (Single-Servo)	52
	Bleeder Valve	110 ①
	Booster To Gear Line	25
	Brake Booster	20
	Brake Pipe Fittings	13
	Isolation/Dump Valve	21
	Master Cylinder	20
	Power Steering Pump To Booster Line	25
	Rear Brake Anchor Pin	④
	Return Line At Booster & Gear	25
	Valve Assembly (Height Sensing) Lever	84①
	Valve Assembly (Height Sensing)	20
	Wheel Cylinder (Duo-Servo)	18
	Wheel Cylinder (Single-Servo)	15
	Wheel Lug Nuts (Single Rear Wheel)	120
	Wheel Lug Nuts (Dual Rear Wheels)	⑥
G SERIES		
1997– 2001	Anchor Pin	⑦
	Backing Plate	104
	Bleeder Valve	100①
	Booster To Gear Line	25
	Brake Booster	21
	Brake Cylinder	15
	Brake Line	13
	Combination Valve Mounting Bracket	13
	Master Cylinder	20
	Power Steering Pump To Booster Line	25

Continued

TIGHTENING SPECIFICATIONS—Continued

G SERIES

1997– 2001	Rear Brake Anchor Pin	③
	Rear Brake Hose To Axle Bracket	90①
	Return Line At Booster & Gear	25
	Wheel Cylinder To Flange Plate	②
	Wheel Lug Nuts (Single Rear Wheel)	⑤
	Wheel Lug Nuts (Dual Rear Wheels)	140

AZTEK, MONTANA, SILHOUETTE, TRANS SPORT & VENTURE

1997– 2001	Bleeder Valve	60①
	Brake Line	11
	Caliper	38
	Master Cylinder	20
	Proportioning Valve Cap	20
	Wheel Cylinder	15
	Wheel Lug Nuts	100

P SERIES

1997–99	Anchor Pin	218
	Backing Plate	103
	Bleeder Valve	60①
	Booster To Gear Line	25
	Brake Booster	18
	Brake Line	13
	Combination Valve Mounting Bracket	25
	Master Cylinder	20
	Power Steering Pump To Booster Line	25
	Propshaft Parking Brake Adjusting Nut	30
	Rear Brake Anchor Pin	③
	Return Line At Booster & Gear	25
	Wheel Cylinder To Flange Plate	②
	Wheel Lug Nuts (Single Rear Wheel)	120
	Wheel Lug Nuts (Dual Rear Wheels)	⑥

TRACKER

1997– 2001	Backing Plate	17
	Brake Booster	10
	Brake Line Flare Nut	12
	Rear Hub	48
	Wheel Bearing Retainer	17
	Wheel Cylinder Bleeder Plug	66①
	Wheel Cylinder	75①
	Wheel Lug Nuts	70

- ① — Inch lbs.
- ② — Vehicles w/gross vehicle weight of less than 6400 lbs., 48 inch lbs.; vehicles at or more than gross vehicle weight of 6400 lbs., 15 ft. lbs.
- ③ — Vehicles w/gross vehicle weight of less than 8400 lbs., 140 ft. lbs.; vehicles at or more than gross vehicle weight of 8400 lbs., 230 ft. lbs.
- ④ — Vehicles w/gross vehicle weight of less than 7200 lbs., 147 ft. lbs.; vehicles at or more than gross vehicle weight of 8400 lbs., 228 ft. lbs.
- ⑤ — Vehicles w/eight studs, 120 ft. lbs.; vehicles w/five studs, 100 ft. lbs.
- ⑥ — Vehicles w/eight studs, 140 ft. lbs.; vehicles w/10 studs, torque in two steps, first to 140 ft. lbs., then to 175 ft. lbs.
- ⑦ — 8400 lbs. & 10000, 220 ft. lbs.; 7200 lbs., 146 ft. lbs.